

PATENT COOPERATION TREATY

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:

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INTERNATIONAL PATENT COOPERATION TREATY
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PCT

WRITTEN OPINION OF THE
INTERNATIONAL PRELIMINARY
EXAMINING AUTHORITY

(PCT Rule 66)

Date of mailing
(day/month/year)

20-01-2004

Applicant's or agent's file reference

NM 5199-01WO

REPLY DUE

within 60 months/days from
the above date of mailing

International application No.

PCT/IB 2002/01605

International filing date (day/month/year)

08-05-2002

Priority date (day/month/year)

International Patent Classification (IPC) or both national classification and IPC

H04L 12/56

Applicant

Nokia Corporation et al.

1. ☐ The written opinion established by the International Searching Authority:
☐ is ☐ is not
considered to be a written opinion of the International Preliminary Examining Authority.
2. This first (first, etc.) opinion contains indications relating to the following items:
 - ☒ Box No. I Basis of the opinion
 - ☐ Box No. II Priority
 - ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - ☐ Box No. IV Lack of unity of invention
 - ☒ Box No. V Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
 - ☐ Box No. VI Certain documents cited
 - ☐ Box No. VII Certain defects in the international application
 - ☐ Box No. VIII Certain observations on the international application
3. The applicant is hereby invited to reply to this opinion.

When? See the time limit indicated above. The applicant may, before the expiration of that time limit, request this Authority to grant an extension, see Rule 66.2(e).

How? By submitting a written reply, accompanied, where appropriate, by amendments, according to Rule 66.3. For the form and the language of the amendments, see Rules 66.8 and 66.9.

Also For the examiner's obligation to consider amendments and/or arguments, see Rule 66.4bis. For an informal communication with the examiner, see Rule 66.6. For an additional opportunity to submit amendments, see Rule 66.4.

If no reply is filed, the international preliminary examination report will be established on the basis of this opinion.
4. The final date by which the international preliminary report on patentability (Chapter II of the PCT) must be established according to Rule 69.2 is: 20-01-2004

Name and mailing address of the IPEA/SE

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Authorized officer

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**WRITTEN OPINION OF THE
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY**

International application No.
PCT/IB 2002/01605

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This opinion is based on a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of:

- ☐ international search (under Rules 12.3 and 23.1(b))
☐ publication of the international application (under Rule 12.4)
☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements of the international application, this opinion has been established on the basis of *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed.")*:

☒ the international application as originally filed/furnished

☐ the description:

pages _____ as originally filed/furnished
pages _____ received by this Authority on _____
pages _____ received by this Authority on _____

☐ the claims:

pages _____ as originally filed/furnished
pages _____ as amended (together with any statement) under Article 19
pages _____ received by this Authority on _____
pages _____ received by this Authority on _____

☐ the drawings:

pages _____ as originally filed/furnished
pages _____ received by this Authority on _____
pages _____ received by this Authority on _____

☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
☐ the claims, Nos. _____
☐ the drawings, sheets/figs _____
☐ the sequence listing (*specify*): _____
☐ any table(s) related to the sequence listing (*specify*): _____

4. ☐ This opinion has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages _____
☐ the claims, Nos. _____
☐ the drawings, sheets/figs _____
☐ the sequence listing (*specify*): _____
☐ any table(s) related to the sequence listing (*specify*): _____

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WRITTEN OPINION OF THE
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

International application No.
PCT/IB 2002/01605

Box No. V Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	_____
	Claims	_____
Inventive step (IS)	Claims	1-26
	Claims	_____
Industrial applicability (IA)	Claims	_____
	Claims	_____

2. Citations and explanations:

Documents cited in the international search report:

D1: CIDON I ET AL: "CONTROL MECHANISM FOR HIGH SPEED NETWORKS", INTERNATIONAL CONFERENCE ON COMMUNICATIONS. INCLUDING SUPERCOMM TECHNICAL SESSIONS. ATLANTA, APR. 15-19, 1990, NEW YORK, IEEE, US, vol. 2, 15 April 1990, pages 259-263.

D2: WO 00 70782, A

D3: YUM T-S P ET AL: "Multicast source routing in packet-switched networks", NETWORKING IN THE NINETIES. BAL HARBOUR, APR. 7-11, 1991, PROCEEDINGS OF THE COMPUTER AND COMMUNICATIONS SOCIETIES. (INFOCOM), NEW YORK, IEEE, US, vol. 2 CONF. 10, 7 April 1991, pages 1284-1288.

It is pointed out in D1 that the high speed of communication links and the altered nature of carried traffic have considerably affected the design and implementation of packet switched networks. The authors explore the effect on the control procedures within the network, specifically focusing on the lessons learned from the prototype PARIS network. The key design philosophy for both the steady-state control and the connection control is described. It is believed that most of the conclusions are general and can be applied to any network, including ATM (asynchronous transfer mode)-based systems (see whole document).

D2 relates to a method and selector for performing selection in a communication system. Frames received by base stations (base stations) are assigned a frame-

.../...

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of: BOX V

quality indicator (FQI) by the base station. FQI information for all frames received is continuously backhauled to a switch. The switch side hauls the FQI information to a call anchoring base station, where a determination of a base station with the best FQI for each frame takes place. Once the anchoring base station determines a base station with the best FQI for a particular frame, the anchoring base station sends a FORWARD_FRAME message to the base station with the best FQI, or, if the anchoring base station is the base station with the best FQI, nothing is sent to the other base stations. Once the FORWARD_FRAME message is received by a base station, the base station immediately forwards the frame (identified by the frame number) to the switch. The switch then routes the selected frame accordingly (page 1, line 1 -page 2, line 10; page 5, line 10- line 27; page 6, line 12- line 26; page 9, line 34- page 10, line 28 and figure 1).

An address coding mechanism is presented, in D3, for multicast source routing packets in packet-switched networks. A simple algorithm for processing these address codes at intermediate output link adaptors is presented. It involves only the recognition of a particular link label at the front part of the address code and the stripping off of a front segment of the address code and so can easily be implemented in hardware. Recognizing that the recipients of a multicast packet very often need to respond to the source node, a reverse-path address code is designed that allows individual destination nodes to retrieve the reverse path address without searching the topology database and invoking any route computation program (see whole document).

The object of the claimed invention is to provide a method and network node for distributing network parameter information, by means of which a more efficient and scalable distribution scheme can be provided.

Mentioned in D1 that each node maintains a routing topology database with link weights reflecting the traffic over each link. When link weights change substantially updates flow to every node using a broadcast algorithm. At the call setup time, the source node obtains the parameters associated with the new call. Typically, these traffic parameters are based on traffic

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Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: BOX V

type and may be changed dynamically during the operation of the connection. The source node uses the information in the local topology database to ensure that the chosen route is capable of carrying the traffic and providing the level of service required by that traffic type. Also mentioned in D1, the spanning tree structure and that when a node wishes to broadcast a topology update message, it gives it the right header ("topology tree broadcast message) and transmits it to all its neighbours on the topology spanning tree, If a broadcast packet (identified as such by its header) arrives over a tree link, it is forwarded over the other tree links.

The invention according to independent claims 1, 18 and 23 differs from D1, which is the most relevant document, by determining the shortest paths from network node to other nodes. This procedure is however used in many routing systems and considered to be well known, and therefore obvious to a person skilled in the art (see for example RFC 1583, RFC 2328).

Thus, the invention according to the independent claims 1, 18 and 23 is not considered to involve an inventive step.

In D2 it is mentioned that the communication system may utilize other analogue or digital cellular communication system protocols that require a macro-diversity frame selection and distribution to take place.

It is therefore considered obvious to a person skilled in the art to implement the system in D1 into a radio communications system like the one described in D2 and reach the claimed invention according to claims 2, 3, 17, 22 and 26.

Therefore, the invention according to claims 2, 3, 17, 22 and 26 is not considered to involve an inventive step.

The invention according to dependent claims 4-16, 19-21 and 24-25 includes steps and details that are considered obvious to a person skilled in the art. The invention according to claims 4-16, 19-21 and 24-25 is not considered to involve an inventive step, with reference to D1-D3.

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